WHAT IS CLAIMED IS:

composed of plural electron emission devices connected in a matrix by plural row wirings and plural column wirings, the method comprising, after the formation of pre-elements to constitute electron emitting portions of the electron emission devices, a deposition step of dividing said plural pre-elements into plural groups, dividing each group into plural sub groups, taking at least one pre-element in each sub group as a unit, and executing a step of voltage application for said unit in succession on the pre-elements in each group and simultaneously on the different groups, thereby forming a deposit in a gap portion of each pre-element.

15

10

2. A method for producing an electron source according to claim 1, wherein the atmosphere gas in said deposition step contains an organic substance and said deposit contains at least carbon.

20

- 3. A method for producing an electron source according to claim 1, wherein the unit subjected to simultaneous voltage application in said same sub group consists of pre-elements connected to a same row wiring or a same column wiring.
- 25
- 4. A method for producing an electron source

according to claim 3, wherein the wirings of the unit subjected to simultaneous voltage application and contained in the mutually different groups are positioned in dispersed manner with a predetermined pitch.

5. A method for producing an electron source according to claim 4, wherein said groups are positioned in succession with mutually continuous areas.



15

20

10

5

6. A method for producing an electron source according to claim 5, wherein, in said groups, the wirings of the unit of each sub group are positioned with a pitch corresponding to the number of wirings of the unit contained in the sub group.

- 7. A method for producing an electron source according to claim 5, wherein, in said groups, the wirings of an x-th unit in each sub group are positioned in succession for all the sub groups for each group.
- 8. A method for producing an electron source
 25 according to any of claims 1 to 7, wherein the plural
 pre-elements are classified into plural areas and said
 areas correspond to said groups.

An electron source comprising plural electron emission devices connected in a matrix by plural row wirings and by plural column wirings, and provided with deposits in electron emitting portions of said electron emission devices, said electron source being produced by the method according to claim 1.

wherein said electron emission device includes a pair of element electrodes a conductive film connected to said element electrodes, and an electron emitting portion formed in a part of said conductive film.

11. An electron source according to claim 9, wherein said electron emission device is surface conduction electron emission device.

- 12. An image forming apparatus comprising an electron source according to any of claims 9 to 11, and an image forming member for forming an image by the irradiation with the electron beam from said electron source.
- 13. A method for producing an image forming
 25 apparatus which comprises producing an electron source
 by the method according to claim 1 and combining
 thereto an image forming member for forming an image by

10

15

20

5





the irradiation with the electron beam from said electron source.